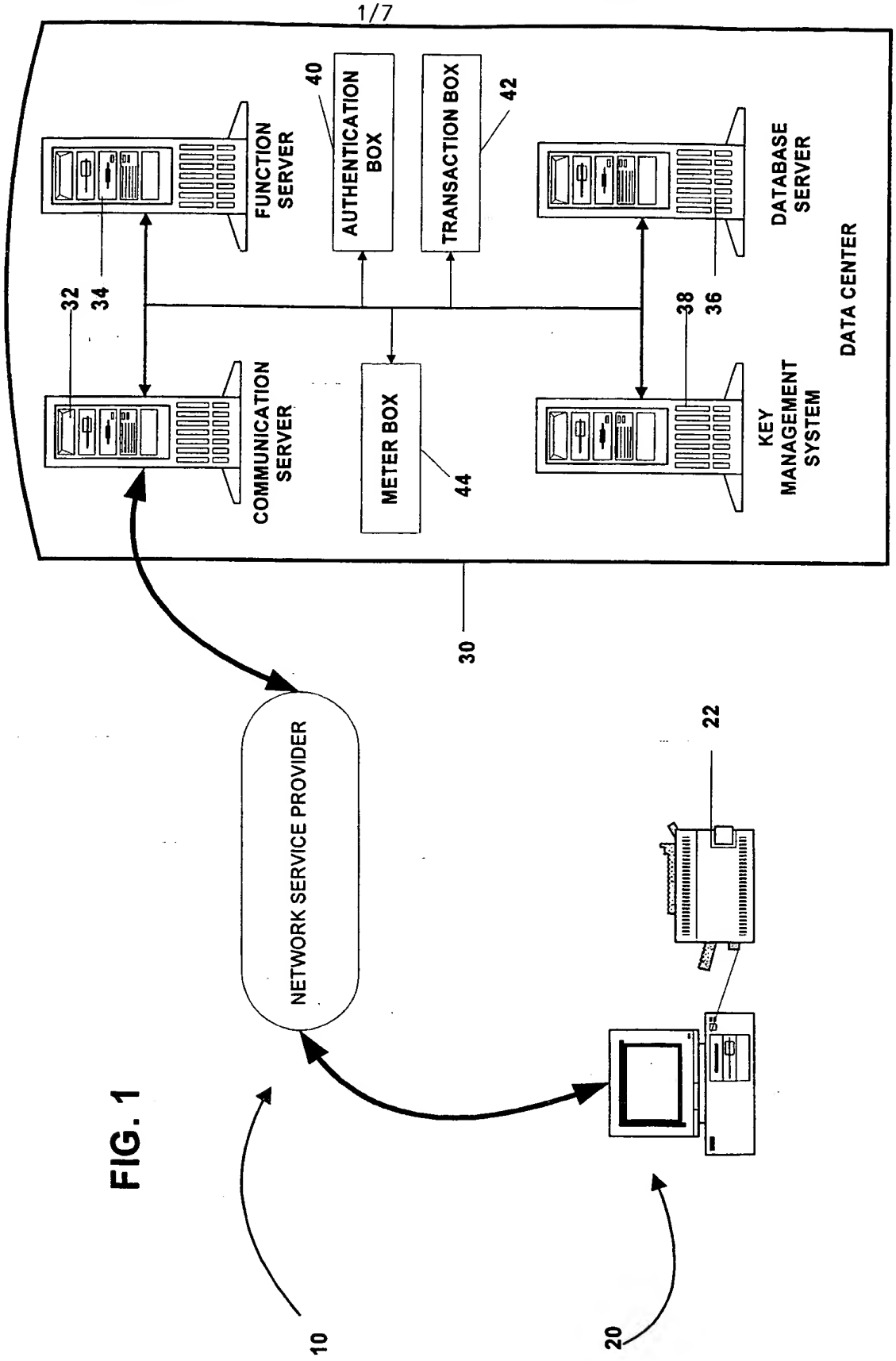

DATA CENTER
FUNCTION SERVER
AUTHENTICATION BOX
TRANSACTION BOX
DATABASE SERVER
COMMUNICATION SERVER
METER BOX
KEY MANAGEMENT SYSTEM
NETWORK SERVICE PROVIDER
10
20
22
30
32
34
36
38
40
42
44

FIG. 1

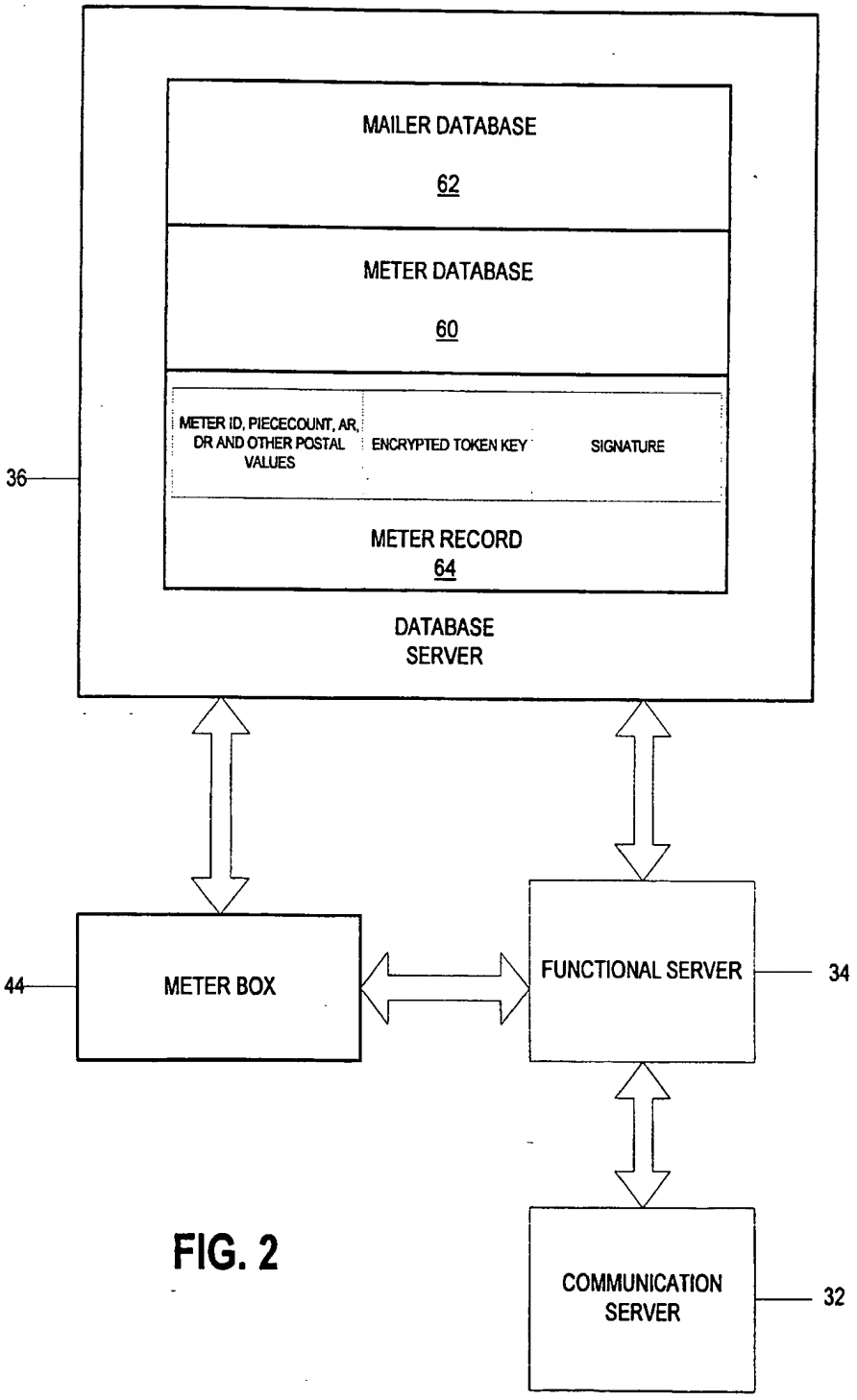

MAILER DATABASE
62
METER DATABASE
60
METER ID, PIECECOUNT, AR, DR AND OTHER POSTAL VALUES
ENCRYPTED TOKEN KEY
SIGNATURE
METER RECORD
64
DATABASE SERVER
36
METER BOX
44
FUNCTIONAL SERVER
34
COMMUNICATION SERVER
32

FIG. 2

09/242210

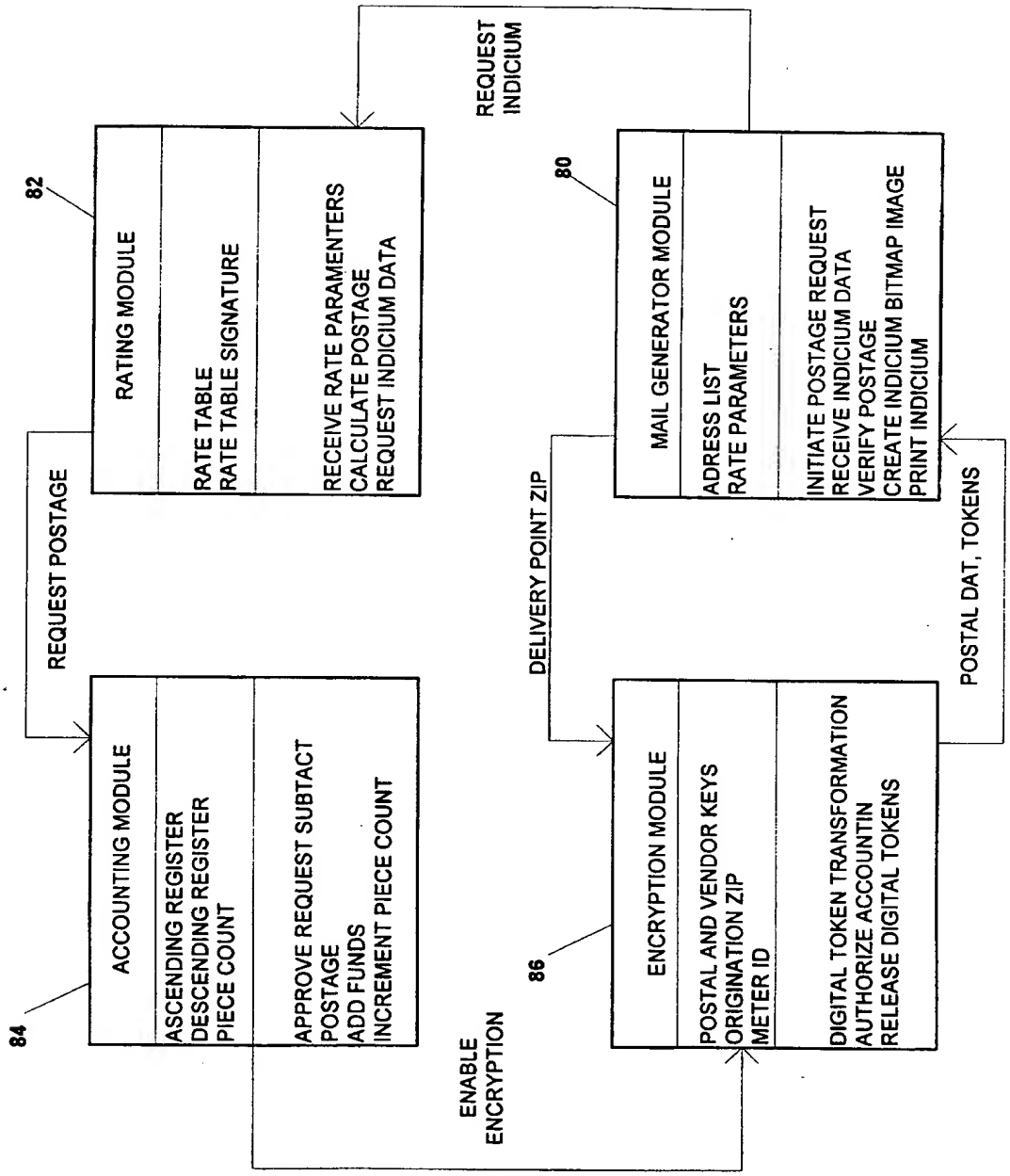


FIG. 3

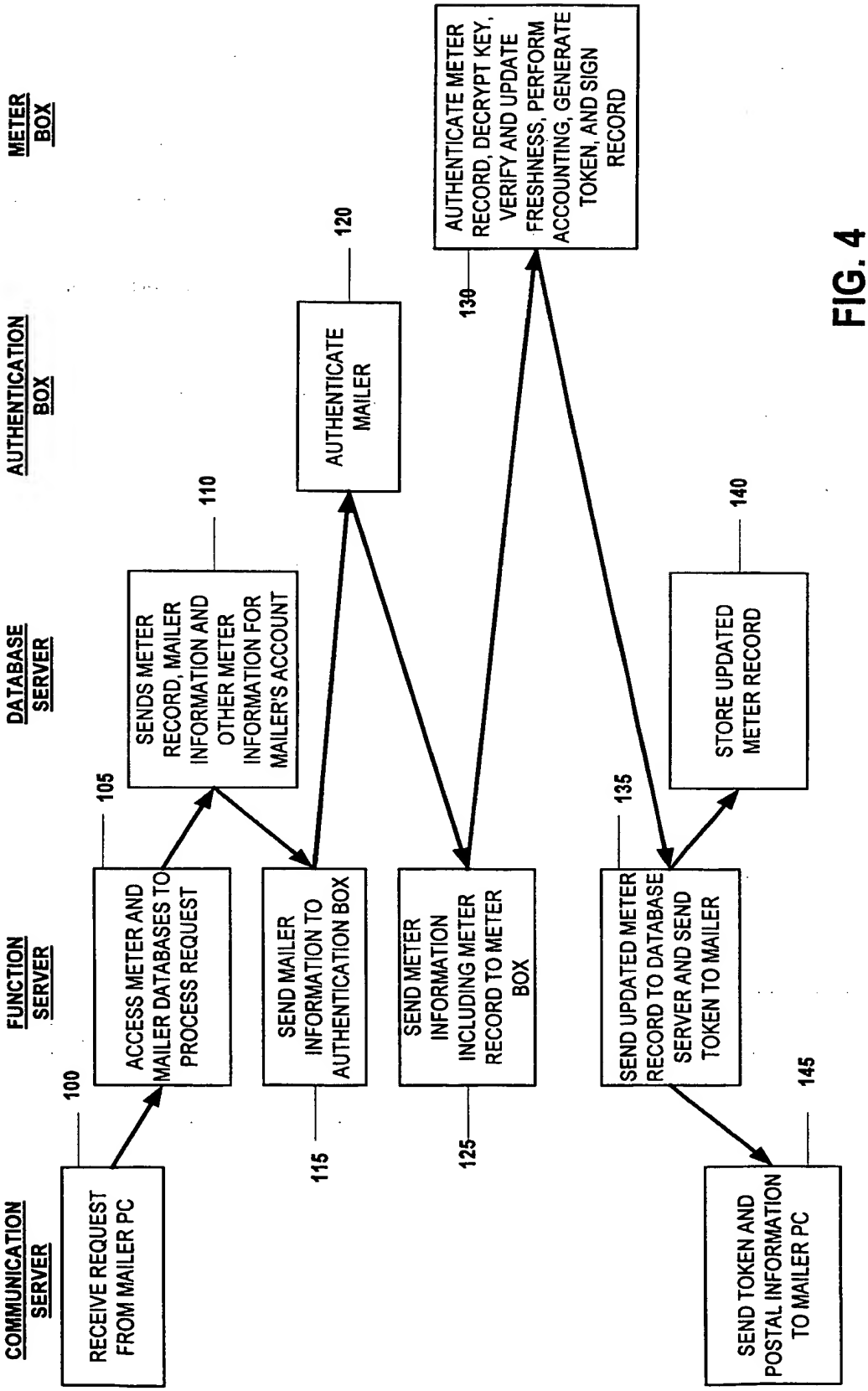

COMMUNICATION SERVER
FUNCTION SERVER
DATABASE SERVER
AUTHENTICATION BOX
METER BOX
RECEIVE REQUEST FROM MAILER PC
100
ACCESS METER AND MAILER DATABASES TO PROCESS REQUEST
105
SENDS METER RECORD, MAILER INFORMATION AND OTHER METER INFORMATION FOR MAILER'S ACCOUNT
110
SEND MAILER INFORMATION TO AUTHENTICATION BOX
115
AUTHENTICATE MAILER
120
SEND METER INFORMATION INCLUDING METER RECORD TO METER BOX
125
AUTHENTICATE METER RECORD, DECRYPT KEY, VERIFY AND UPDATE FRESHNESS, PERFORM ACCOUNTING, GENERATE TOKEN, AND SIGN RECORD
130
SEND UPDATED METER RECORD TO DATABASE SERVER AND SEND TOKEN TO MAILER
135
STORE UPDATED METER RECORD
140
SEND TOKEN AND POSTAL INFORMATION TO MAILER PC
145

FIG. 4

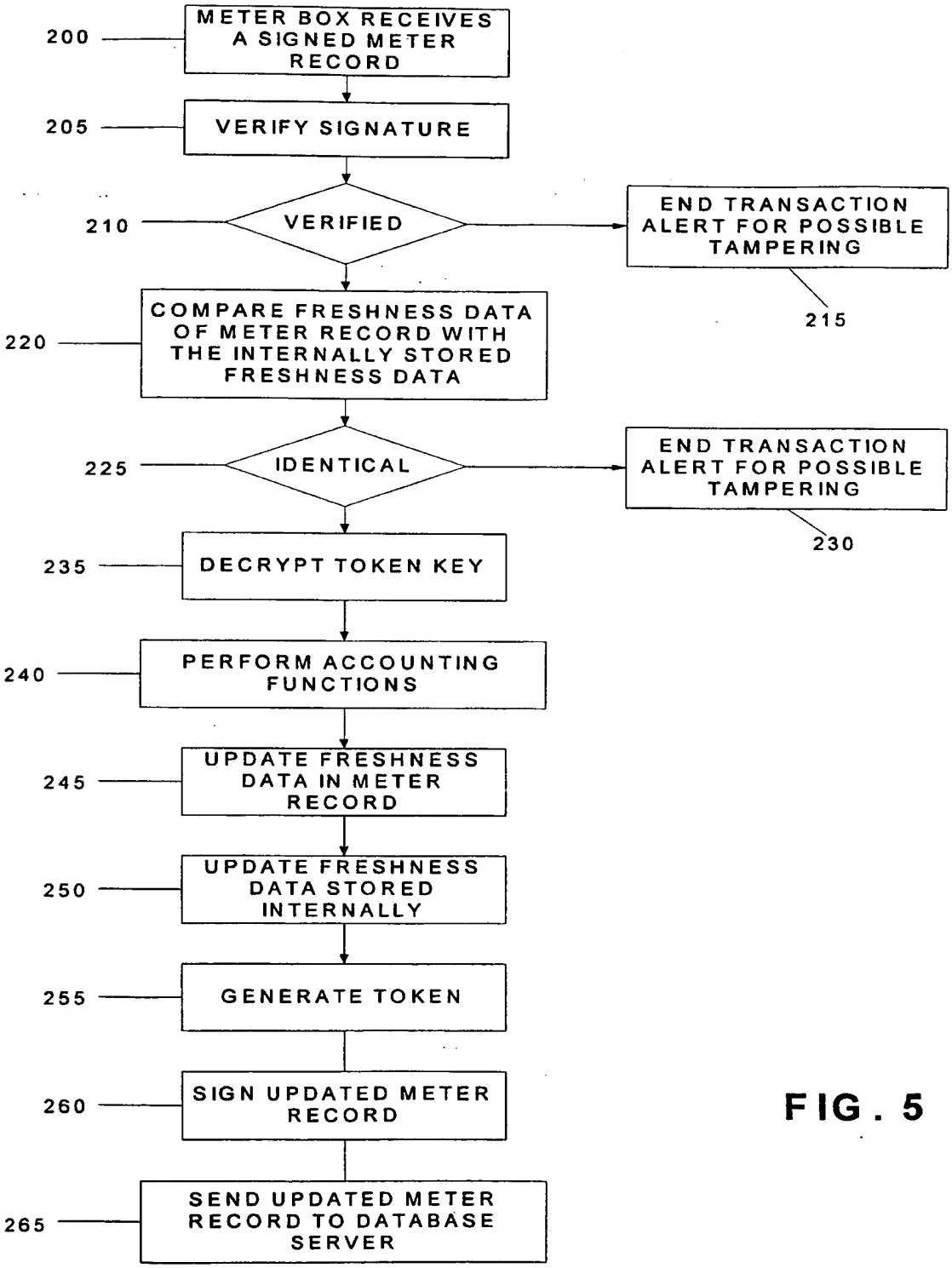

200
METER BOX RECEIVES A SIGNED METER RECORD
205
VERIFY SIGNATURE
210
VERIFIED
END TRANSACTION ALERT FOR POSSIBLE TAMPERING
215
220
COMPARE FRESHNESS DATA OF METER RECORD WITH THE INTERNALLY STORED FRESHNESS DATA
225
IDENTICAL
END TRANSACTION ALERT FOR POSSIBLE TAMPERING
230
235
DECRYPT TOKEN KEY
240
PERFORM ACCOUNTING FUNCTIONS
245
UPDATE FRESHNESS DATA IN METER RECORD
250
UPDATE FRESHNESS DATA STORED INTERNALLY
255
GENERATE TOKEN
260
SIGN UPDATED METER RECORD
265
SEND UPDATED METER RECORD TO DATABASE SERVER

FIG. 5

FIG. 6

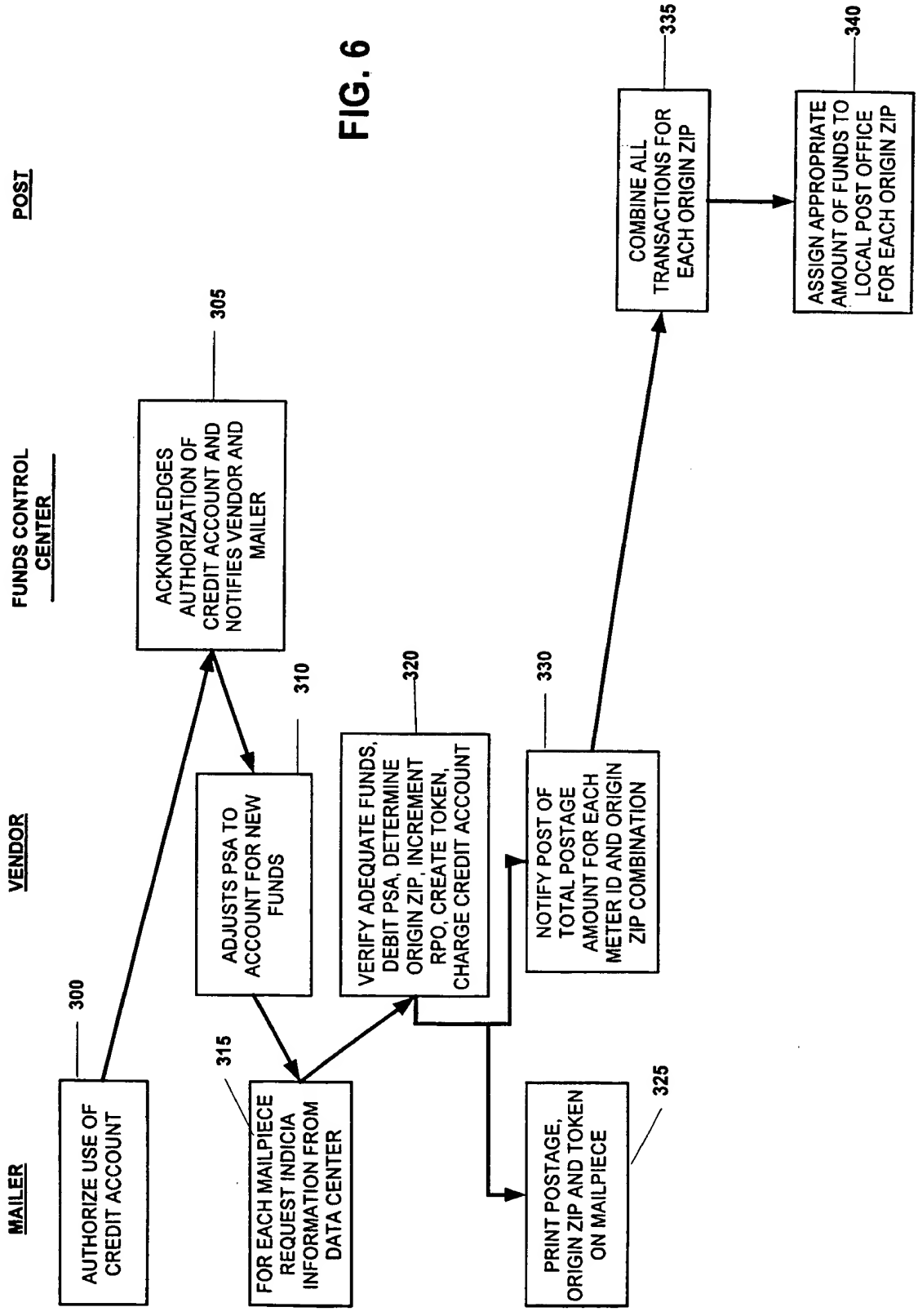
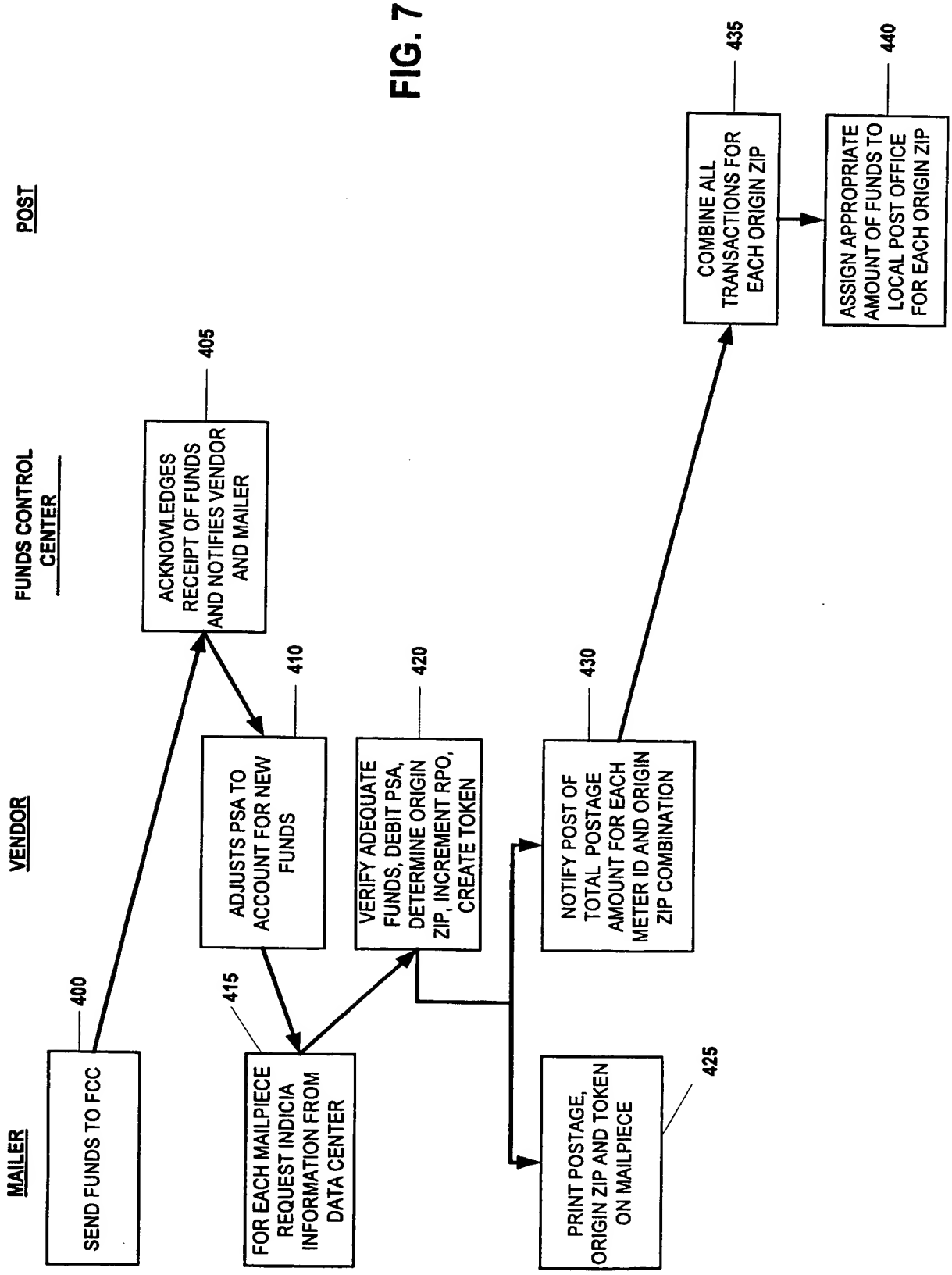

MAILER
VENDOR
FUNDS CONTROL CENTER
POST
AUTHORIZE USE OF CREDIT ACCOUNT
300
FOR EACH MAILPIECE REQUEST INDICIA INFORMATION FROM DATA CENTER
315
ADJUSTS PSA TO ACCOUNT FOR NEW FUNDS
310
ACKNOWLEDGES AUTHORIZATION OF CREDIT ACCOUNT AND NOTIFIES VENDOR AND MAILER
305
VERIFY ADEQUATE FUNDS, DEBIT PSA, DETERMINE ORIGIN ZIP, INCREMENT RPO, CREATE TOKEN, CHARGE CREDIT ACCOUNT
320
PRINT POSTAGE, ORIGIN ZIP AND TOKEN ON MAILPIECE
325
NOTIFY POST OF TOTAL POSTAGE AMOUNT FOR EACH METER ID AND ORIGIN ZIP COMBINATION
330
COMBINE ALL TRANSACTIONS FOR EACH ORIGIN ZIP
335
ASSIGN APPROPRIATE AMOUNT OF FUNDS TO LOCAL POST OFFICE FOR EACH ORIGIN ZIP
340

FIG. 7


MAILER
VENDOR
FUNDS CONTROL CENTER
POST
SEND FUNDS TO FCC
400
FOR EACH MAILPIECE REQUEST INDICIA INFORMATION FROM DATA CENTER
415
ADJUSTS PSA TO ACCOUNT FOR NEW FUNDS
410
ACKNOWLEDGES RECEIPT OF FUNDS AND NOTIFIES VENDOR AND MAILER
405
VERIFY ADEQUATE FUNDS, DEBIT PSA, DETERMINE ORIGIN ZIP, INCREMENT RPO, CREATE TOKEN
420
PRINT POSTAGE, ORIGIN ZIP AND TOKEN ON MAILPIECE
425
NOTIFY POST OF TOTAL POSTAGE AMOUNT FOR EACH METER ID AND ORIGIN ZIP COMBINATION
430
COMBINE ALL TRANSACTIONS FOR EACH ORIGIN ZIP
435
ASSIGN APPROPRIATE AMOUNT OF FUNDS TO LOCAL POST OFFICE FOR EACH ORIGIN ZIP
440